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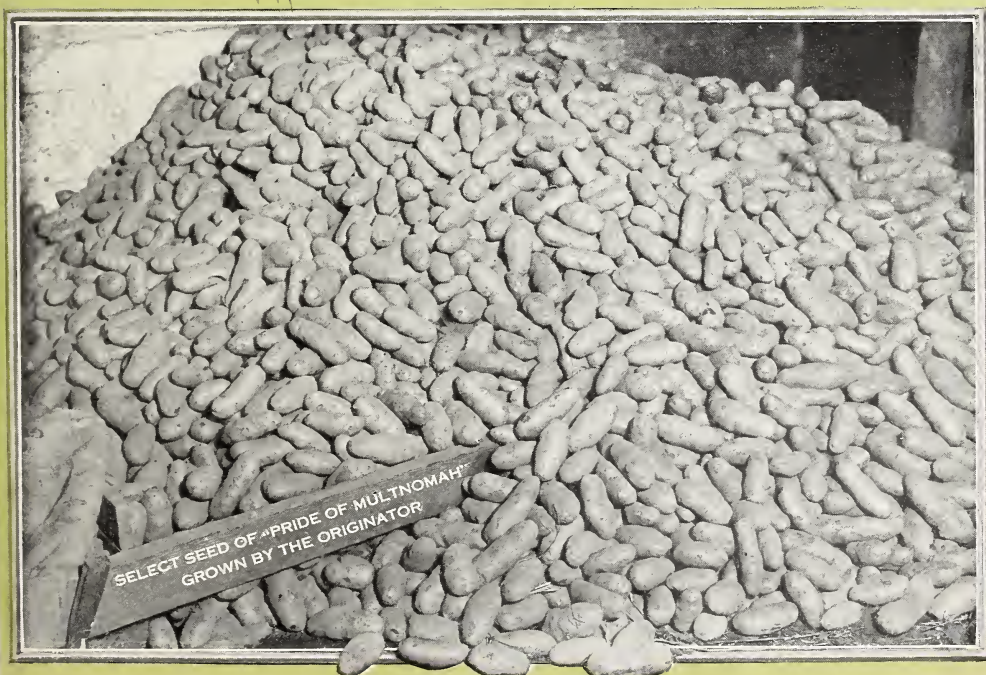


NORTHERN GROWN

SEED POTATOES

H. A. HYDE

WATSONVILLE, CALIFORNIA



SEED POTATOES

THE California grower demands a clean, true to name uniform type of seed—free from disease and of strong vitality, varieties adapted to the different soils and climatic conditions of the potato growing sections of our State.

The Portland Seed Company of Oregon has been working for years among the growers of the North to improve the stock and determine the best varieties for the coast markets. During the many seasons I have worked with them in the handling and distribution of their northern grown Strawberry Plants, I have become interested in the substantial advancement they have made with potatoes, recognizing the importance of their work to the growers of California, as our mild climate is favorable to the development of potato diseases and infestations of harmful pests making it necessary to renew seed stock at frequent intervals.

GOOD CLEAN SEED—carefully selected as to type, shape and size is sent them and planted on new land or where there has been a rotation of crops.

These fields are scientifically cultivated and special care taken to prevent mixtures. The results of their care and attention is shown when in a field of one hundred acres in this State from their seed the percentage of mixture reported by the State Horticultural Commission, when tests were made for certification was less than one-fourth of 1%, and large plantings of American Wonder and Burbank potatoes from stock furnished by them successfully passed inspection for certification last season. Many of their varieties are well-known to California growers, who have tested them out with splendid results.


TRIAL PLOTS—This season I am maintaining trial plots of twenty or more varieties at the State Universities at Davis, California and Reno, Nevada, and smaller plots at the High Schools at Denair and Ventura, California and Minden, Nevada. In addition to this I have distributed many carloads of choice hill selected seed potatoes to different sections of the coast and have set out many smaller trial plots. Careful records are being compiled of the growth condition and productiveness of this stock at Arroyo Grande, San Luis Obispo, Chico, Santa Cruz, Pescadero, Sebastopol, Martinez, Pleasant Grove, Morgan Hill, Cloverdale, Salinas, Watsonville, Loma Linda, Monterey, Atwater, Nevada City, Ione, Lakeport, Red Bluff, Eureka, Wasco, Bangor, Maricopa, Bakersfield, Tudor, Mendocino, Ventura, Santa Maria, Guadalupe, Manteka, Soledad, King City, Castroville, Hollister, Gilroy, San Jose, Haywards, and other points in California. Mason, Smith, Fallon and Carson Valleys in Nevada.

Potatoes re-planted year after year in California will naturally run out and growers interested in improving their stock or securing clean seed of strong vitality and having heavy yielding qualities may contract to have their seed grown in the North.

If interested in this important work, I will be very pleased to call in person at a seasonable time and demonstrate to your satisfaction the importance and value of this work to the potato growers of California.

Watsonville, Calif.

H. A. HYDE

 The next edition of this booklet will contain useful information in reference to potato diseases and their treatment, and much valuable additional matter of great interest to potato growers on the coast, and will be given out to our customers without charge with all orders for potatoes, or mailed on receipt of 10 cents.

IMPROVING THE YIELD AND QUALITY

POTATOES are of such great economic importance as a food, give quick, sure cash returns and are so valuable in crop rotations that our experience as growers and the methods and recommendations of high authorities, which we have quoted, may be of interest and helpful to others at this critical time when there is a general awakening to the necessity for better cultural methods, standardization of crops and above all a systematic selection of seed.

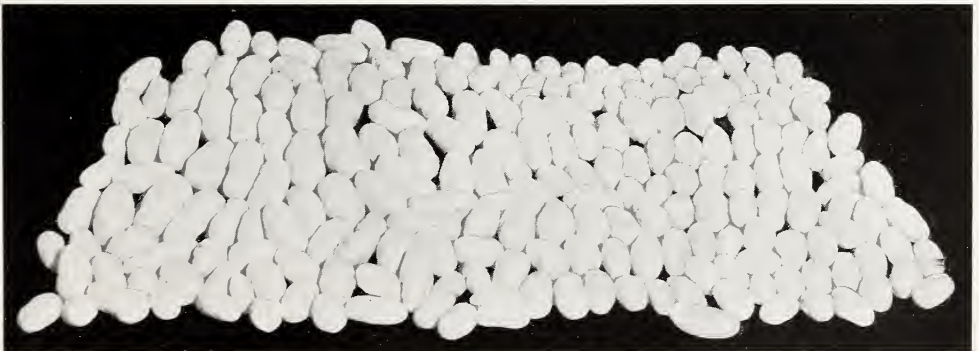
Unfavorable growing conditions in many sections and the urgent necessity for food conservation have shown that some action must be taken to improve the quality and increase the average yield.

The general practice throughout the country of selling the choice potatoes and planting the culls, no organized effort to combat potato diseases and the destructive insects, poor cultural methods and the practice of marketing through brokers, who for example buy indiscriminately all elongated white potatoes as Burbanks or Wonders as the case demands, has resulted in untold loss and confusion which, however, is being corrected by Growers' Associations and by the well-directed efforts of extension service men and we can hope for a wonderful increase in yield and value of the crop under improved methods of growing and standardizing varieties.

So much excellent literature on the potato, including the splendid new booklets of our State institutions, giving special information for various sections are now ready for distribution or in the hands of growers, that we will confine ourselves briefly to our own problems, the most harmful and prevalent diseases and pests—and descriptions of the varieties of potatoes that are in general cultivation on the Pacific Coast and have proven best for our markets and growers.

No radical departure in methods of growing has been used but the success of our efforts, covering a period of about fifteen years, demonstrates the value and advantages of persistent, systematic work.

Special detailed information will always be cheerfully furnished on request and if we can interest or help you in any way to improve the standard and yield of your crop, this little booklet will have served its purpose.



Sixteen hills of American Wonder selected from 1916 crop by one of our growers who has practiced hill selection for 12 years on this variety. Note the uniform type and even size—No small or irregular tubers. These planted in four rows near a field of carefully selected seed from the same stock show a better growth; again proving the value of the best selections.

These select hills will produce seed stock for 1918.

SEED POTATOES

The following descriptions have been carefully written from our own experience, with the addition of notes on origin of varieties from Bulletins of the U. S. Dept. of Agriculture.

The illustrations are from our own photographs of average types as produced by our growers in the North.

EARLY VARIETIES



"Earliest of All"

Earliest of All:—

Originally a selection from Early Eureka introduced by Portland Seed Co., 1908, showing a marked difference in habit and greatly increased yield which years of careful re-selection have firmly fixed and improved. Earliest of All is a shallow eyed, white skinned variety of vigorous growth, not subject to blight or disease and does not make a second growth. Not affected by summer drouths owing to its quick growth and early maturity. Keeps as well as any late potato. Has shown up exceptionally well in California this past season and is the earliest of all early potatoes.

Early Rose:—*Originated by Albert Bresee, Hubbardton, Vt., in 1861; claimed to be a seedling of Garnet Chili. Introduced to the public by B. K. Bliss & Sons, 1868.*

An early maturing pink variety producing strong, vigorous vines of medium height. Flowers white, rather abundant. Tubers quite smooth, elongated or oblong, stem and seed end rather blunt. Eyes shallow, but sharp and strongly marked; skin thin but tough. Flesh creamy white sometimes streaked with red, solid and brittle, rarely hollow. Our strain of this grand "old timer" is exceptionally good.



Early White Prizetaker

Early White Prizetaker:—

One of the finest of the early sorts, oblong in shape, 4 or 5 inches in length. Skin smooth and white with few eyes. Is of superior cooking quality, baked or boiled, cooking up dry and floury. White Prizetaker has important advantages over other early potatoes as its white skin, large size and good keeping qualities make it an ideal main crop variety that sells at the best price.



Early Rose

CHOOSING THE BEST VARIETY

In choosing a variety of potatoes consider your soil conditions, market requirements, climate and seasons, and history of available seed stock. There is no one best potato but there are many excellent sorts some of which will prove more profitable and satisfactory for your purpose than others.

We have much valuable data that will be helpful to you in your selection that is free on request.

SEED POTATOES—continued

EARLY VARIETIES



Scotch Rose

Scotch Rose:—

Reported to be a seedling of Early Rose, developed by the Guelph-Ontario station, and considered to be superior to the parent stock through sections of New York and the New England states where it has been tried. Color a little deeper than Early Rose. The tubers average larger and of flattened oval to oblong type; of superior cooking quality, cooking up light, white and floury. A hardy heavy yielding dependable variety that we believe to be superior in every way to Early Rose.

Early Ohio:—*Originated by Alfred Reese in 1871; claimed to be a seedling of Early Rose. Introduced by Gregory in 1875.*

One of the best early pink potatoes, similar to Early Rose. Tubers round, oblong shape. Eyes rather shallow but strong. A heavy yielding dependable variety. An old favorite that is still popular in many sections.

Early Jackson:—

A good early white variety. Better yielder than the Democrat when grown under the same conditions; almost doubling the yield per hill over this variety. Is also used for early planting as it stands handling well and is a good cooker when dug green.

Democrat:—

This is a small red potato largely grown along the eastern slopes of the Santa Clara Valley. Very early. Not a heavy yielder. Its most valuable quality being the tough skin protecting it from handling while it is immature. Usually averages from three to four potatoes in a hill.



Early Sunrise

Early Sunrise:—

A hardy early pink variety which has always been free from blight and is the best yielder of its type. Cooks dry and mealy. One of our earliest and best pink skinned potatoes.



Early Freeman

Early Freeman:—*Originated by Freeman in 1885; claimed to be a seedling of Silver Tip. Introduced by W. H. Maule in 1891.*

A vigorous productive early potato producing uniform tubers of oblong flattened shape usually blunt ends, russet skin, flesh fine grained white and floury, much earlier and a far better yielder than many other early varieties.

Note Exception.—Dept. Agriculture, "Medium late, skin dull creamy white or light buff"—The stock of Freeman that we offer is not a late or medium but an early variety that corresponds with the originator's description. We are unable to understand the report of the U. S. D. A.

YOU can grow potatoes under most average conditions of soil and care, but for the big yields of shapely tubers that pay big profits it requires soil adapted to potato growing, good seed stock properly planted, and plenty of **cultivating at the right time**. You can make your soil fit by proper rotation and use of necessary fertilizers.

MAIN CROP AND LATE VARIETIES

"PRIDE OF MULTNOMAH" grown by Boa Vista Ranch from our Oregon grown seed. Won the State Competition at the Panama-Pacific Exposition, for best acre of Potatoes grown in California.



Pride of Multnomah

Pride of Multnomah:—

Introduced in 1909 by the Portland Seed Company. Tubers are uniform in size of the ideal elongated type with smooth thin white skin; eyes shallow; flesh snow white of finest table quality; flowers white; vines medium large of bushy growth; withstands drought well and is blight and disease resistant to a remarkable degree.

Pride of Multnomah is the leader in its class, being superior in yield, uniformity and table quality—holding the record yield for the state of California from our Oregon grown seed—790 bushels of clean uniform stock, the prize acre at P. P. E., San Francisco, 1915, grown by Boa Vista Ranch, Placerville.

Burbank—Low Top:—Originated by Luther Burbank, 1873; claimed to be a seedling of *Early Rose*. Introduced by J. J. H. Gregory in 1876. A standard commercial variety. Late and very productive. Skin nearly smooth. Eyes rather shallow. Tubers long and slightly flattened. Under proper selection it thrives equally as well now as at any time since its introduction. A fine bred-up, heavy yielding strain.

Burbank—High Top:—

A distinct strain of true "high top" obtained from the field near Watsonville—won third prize for productiveness at the state contest in 1915—370 sacks of 120 lbs. each to the acre. Seed has been carefully grown in the north from this select stock.



Burbank's—High Top

Our Burbanks are a good, heavy yielding uniform type, the "high tops" being a California selection that we are constantly improving.

TABLE POTATOES

I can supply your requirements for table stock of the finest grade, *Potatoes that are uniform—that cook and look alike*. The best way to secure this fancy stock at prices that are comparatively cheaper than the market run—owing to the fact that there is little waste—is to have it grown to your order and delivered in season. Tell me your requirements and I will quote you promptly.

American Wonder:—*Originated by L. Wall; Seedling of Wall's Orange. Introduced by James Vick in 1892.*

One of the earliest and best main crop varieties. Strong grower of branching habit and great producer. Tubers white, large and uniform in size; elongated and slightly compressed. Few eyes and nearly flush with the surface. Blooms white; foliage rich dark green.



American Wonder

British Queen:—*Introduced in U.S. from England*
Very prolific early white-skinned variety, round or oval in shape. Is of fine table quality, cooking dry and mealy. Has made a splendid record in the Sebastapool district of California—is disease resistant, hardy and vigorous, has a purple flower and is very similar to the purple flowered "White Rose" that is so popular in southern part of the state.



British Queen

White Rose:—*California.*

A standard market potato in southern California, the shape being a flattened oval rather elongated, having few eyes and a beautiful creamy white skin. Abundant foliage and lavender flower—fading to light. As an exhibition variety *White Rose* has won many honors, being awarded a gold medal at P. P. E. San Francisco—the stock we grow is from this same strain.

Yields well, and although not an early maturing potato, it makes a vigorous rapid growth and can be used quite early.

Note.—The *White Rose* originating in Aroostook Co., Maine, is a different type of potato from the above, having the physical characteristics of the *Early Rose* and is a white flowered variety. To avoid confusion California has been added to the name to distinguish the variety that is in demand in our state.



White Rose-California

Netted Gem:—*California Russett, Russett Burbank, Yakima Gem, Idaho Russet, etc. Origin not known.*

A splendid main crop late potato that gives good results in dry sections. Tubers are elongated, medium sized with russet netted skin; flesh white; eyes are flush with surface; good keeper and produces a fine yield. This is the variety grown extensively by irrigation in Washington and Idaho for baking. Our stock is extra choice of the most improved type.



Netted Gem

Producer:—*A seedling of the Portland Seed Co.*

A large, smooth, oval, white potato with shallow eyes, of finest table quality, does not boil to pieces and has no superior baked. Is a hardy, vigorous grower, producing enormous yields and is especially valuable for dry or light soil, and has shown up better in California trials than any other new variety. Sample hills dug on overflowed river sediment averaged 4 lb. 3 oz.—416 sacks of 120 lbs. each to the acre—without irrigation.



Producer



"Snow"

Snow:—*Originated by W. E. Johnson, Richmond, Me.*

A splendid early maturing main crop potato that gives a good yield on poor or light soil. Vines are luxuriant and dark green with heavy foliage, stems light green, flowers white, freely produced. Tubers large, oblong and slightly flattened, generally with blunt ends, base usually more or less notched. Skin creamy white more or less netted, flesh fine grained, flaky and of excellent quality; eyes shallow. Potatoes grow close together with few small ones. The seed put out last year was a delight to early planters. One patch cut down by frost three times "came back" and produced a good crop.



White Star

White Star:—*Originated by E. S. Brownell, Essex Junction, Vt., in 1875.*

Claimed to be a seedling of Excelsior crossed by White Peachblow. Medium early heavy producing variety of exceptionally strong, vigorous growth. Foliage dark green. Tubers oblong and large. Skin white with a minute russet netting. Flesh white. Adapted to strong bottom slough or foot hill land. Our selected strain is from the Pajaro Valley stock built up.

Gold Coin:—*Originated by Gideon J. Stafford, North Bennington, Vt. Introduced by W. A. Burpee in 1903.*

A main crop variety of hardy vigorous growth and great productiveness. Smooth regular form, slightly oblong, rather broad and quite

thick through. Ends slightly rounded, skin is thin and glossy of a light golden tint, more or less netted, eyes small and rather shallow, flesh is pure pearly white, fine grained and cooks to a dry floury whiteness. Flowers white, vines strong with luxuriant deep green foliage. A good standard all-round medium early variety.

Green Mountain:—*Originated by O. H. Alexander, Charlotte, Vt., 1878; claimed to be a seedling from a cross between Dunmore and Excelsior. Introduced by J. A. Everett & Co. in 1885.*

Strong healthy vines of branching habit with medium green heavy foliage. Stems light green, flowers white, freely produced. Tubers large broad, oblong, flattened, somewhat irregular, usually blunt ends, eyes vary from shallow to medium with strong bud eye cluster, skin creamy or buff white occasionally splashed with russet toward seed end, generally well netted. One of the best varieties tried out in California. Very productive.



Garnet Chili

Garnet Chili:—*Originated by C. E. Goodrich, Utica, N. Y., 1853; claimed to be a seedling of Rough Purple Chili. Introduced by Goodrich, 1857.*

A heavy yielding medium size late potato of roundish irregular form; deep eyes, blunt ends, skin red, flesh moderately white, vines and leaves light green. Its growth is so vigorous and rapid that the young tubers form very early and stand handling and shipping better than other early varieties, hence its value to California growers for early shipping to distant markets.

Uncle Sam:—*Origin not known. Introduced by Peter Henderson & Co.*

Sturdy, vigorous vines of erect growth in early stages, gradually assuming a spreading habit later in the season. Tubers oval with russet white skin and rather shallow eye, maturing medium late. Prolific bloomer producing white flowers. Largely used in California for March planting following the earliest varieties.

Note.—Stock has been allowed to run out—Snow or Producer being considered superior.

GROWING POTATOES

PREPARATION OF THE SOIL—

Circular No. 161, "Potatoes in California" by Professor Gilmore of the University of California, gives briefly such sound advice on this subject that we quote his recommendations as follows: They will apply in general to any potato growing district.

"PREPARATION—The importance of early and thorough preparation cannot be over emphasized. It is estimated that this procedure gives half the assurance of the crop. The land should be plowed as deeply as possible in the fall and allowed to remain rough during the winter, in order that it may be benefitted by the winter rains and weather. As early in the spring as possible it should be worked with disc and harrow as often as may be, in order to keep the surface in good condition and to destroy early germinating weeds. It is desirable that the interval between opening the furrows before planting and closing them afterward shall be as short as possible. In case the land cannot be plowed until spring it should be plowed deeply and worked frequently, in order to give it sufficient compactness to facilitate the distribution and retention of moisture."

The great advantage of thorough preparation of the seed bed before planting should never be overlooked as much can be done at this time to insure the crop against later adverse conditions. Care should be taken not to work the soil when too wet as this may result in a serious failure and may require a long time to get the ground in good condition again.

SELECTION OF SEED—

The time and trouble necessary to get results from hill selection is comparatively small and insures large returns in increased yield and improved quality, better prices, more resistance to diseases and pests by increasing the vigor of the stock. The practice of selection is not urged for the production of new strains but very quick results are secured by the isolation of the established heavy yielding more uniform types that occur in seed stock of good average quality. The average yield from stock that has not been re-selected is held low by the inferior and weak strains. Their elimination gives good returns and amply repays for the extra labor. This elimination and selection can be carried on as far as the results justify.

Two potatoes of equal appearance selected from the bin or pile may not produce the same general results, for the reason that the tendency is to reproduce the characteristics of the hill instead of the individual tuber, hence the selection of one good potato from an otherwise poor hill will not give the results that a potato of the same general appearance from a good heavy yielding hill. Small potatoes as a rule come from poor hills, and if planted will tend to produce small potatoes and poor hills. Careful selection should be continued from year to year to improve and maintain the standard as there is always a possibility that the good yielding strains will at times produce poor hills that can readily be thrown out if looked for but that otherwise will rapidly cut down yield and grade.

Quoting Cornell University—the results from tests of poor yielding strains of the same variety against the high yielding selections for five years—3 varieties—gives an average of 82 bushels per acre for the low yielding strains and 208 bushels for the high yielding strains.

Selections for type, color, shallow or deep eye, shape and like physical characteristics are transmitted as demonstrated in the example of American Wonder illustrated herewith. One grower for several consecutive seasons selecting the shortened, rounded types, the other in a different section of the country having selected for the standard type of this well known variety. The hills illustrated show a general and marked uniformity to the types selected and would not be readily recognized as strains of the same potato.

AMERICAN WONDER

ILLUSTRATING the results of hill selection to a chosen type covering a period of several years.

One grower choosing the rounded type, the other working for the elongated form which is the recognized standard—the two hills of each type shown were representative hills from the two plantings in the same field.



Owing to the climatic conditions in many sections of California it has proven more profitable to change seed every second year—northern grown stock giving best results.

GROWING POTATOES--continued

SOIL REQUIREMENTS AND TREATMENT—

Good Potato soils—those that produce big yields of shapely tubers, having good table and keeping qualities—may be of several different types.

Clay loam, sandy or gravelly loam, silt, wet land and soils heavy in organic matter have all produced excellent potatoes. But only where the drainage is good and the soil well aerated and properly worked can best results be obtained. Given a soil of average fertility drainage is of the utmost importance, next in order being the organic content in the form of humus to retain the moisture and in the case of heavy soils to improve their mechanical condition after proper drainage has been secured. A soil rich in organic matter not only conserves the necessary moisture for the growing crop but is less susceptible to the extreme changes of atmospheric temperatures that are often so unfavorable to growth and development.

SOIL AND DISEASES—

It is generally recognized that certain soil types are favorable to certain of our common potato diseases and where it is possible to do so, advantage should be taken of this knowledge and extreme care used to prevent the introduction of certain diseases to soil conditions that are favorable to their development.

Rhizoctonia and Black Leg, as examples, develop more freely and cause more loss on heavy wet soils. Scab is more prevalent in soils having an alkaline re-action.

Rhizoctonia is favored by an acid or neutral soil, therefore the alkalinity or acidity of the soil influencing certain diseases can become a factor in their control. The use of lime, producing an alkaline re-action may increase the amount of Scab, while the plowing under of a soiling crop will increase the acidity of the soil and lessens Scab but makes conditions more favorable for the development of Rhizoctonia.

Barnyard manure, bone meal, wood ashes and some of the forms of potash salts are all conducive to Scab and if used should be applied the Season or Fall previous to planting.

METHODS OF SEED SELECTION—

There are several methods of selection and the grower should decide upon and follow the one that seems best for his purpose. For those who are not in a position to produce their own seed, the purchase of certified seed is recommended as this stock is produced under careful supervision in many of our potato growing States and can be depended upon for good results and should be secured when possible as a basis for further selection by those who prefer to grow their own seed.

MASS SELECTION BY HILL—

Selection at digging time in the field gives an opportunity for choosing the best heaviest yielding hills of a uniform size and type and free from disease but where this practice is to be depended upon for the seed stock, great care must be used to eliminate all diseased and weak plants as early as possible during growing season and the tubers must be carefully handled when dug to avoid bruising or injuring the skin and stored carefully with due consideration for temperature and proper ventilation.

TUBER UNIT METHOD—

The tuber unit method of selection is considered the best for production of select strains and requires three seasons to get a fair start but if carefully followed is sure to give splendid returns. By this method the choicest potatoes are selected of six to eight ounces in weight as near as possible the ideal type of the variety chosen.

Potatoes of the elongated or Burbank type should be cut through their length and then across, quartering them. Round or oval types of potatoes should be quartered through the seed ends. Each piece is then planted making a unit of four hills from the same potato, a longer space being left between the units in the row than between the hills to assist in keeping the units separate and each unit numbered or marked for identification. During the growing season, the weak plants, or those showing any disease are thrown out and at harvest the units are kept separate and only the most promising reserved. The following season at planting time, ten potatoes should be selected from each unit saved and divide these as before, which gives forty hills instead of four in each unit the second year. After this hill selection may be followed in field or the tuber unit method continued.

HILL SELECTION—

Hill selection and testing unusual hills selected from the field and grown in separate rows for production of seed stock followed consistently gives profitable returns and is the method most generally practiced. Whatever method is used, careful roguing out of all diseased and weak plants, treatment of seed and selection of suitable and disease free soil is absolutely necessary for the most profitable returns.

Ample evidence that potatoes do not "run out" under normal conditions is furnished by some of our standard, well known varieties, such as Burbanks, Garnet Chili, Early Ohio and Early Rose, which for 60 years, in the case of the Garnet Chili, have proven true to type and show great vigor and yielding qualities under favorable conditions, also demonstrating that excellent results are to be obtained by careful selection and good growing methods.

GROWING POTATOES--continued

RESULTS OF HILL SELECTION

The four hills here shown are average from two plantings in the same field of Hill Selected and Bin Selected seed — Burbanks showing a great increase in the yield of the Hill Selected over the best seed that can be sorted from the pile. In this experiment both methods had been practiced over a period of several seasons.



SEED TREATMENT—

Dipping either in a solution of Formaldehyde or one of Bi-Chloride of Mercury (Corrosive Sublimate) are the two methods generally recommended for treating seed potatoes, as follows:

Formaldehyde, 40% Commercial Solution.....	1 pint
Water.....	30 gallons

Soak the potatoes in this solution for two hours and spread out to dry. This treatment is effective against Scab but as it is not to be depended upon for Rhizoctonia, the Bi-chloride of Mercury solution is always recommended as it will do all that the Formaldehyde accomplishes and takes care of our most troublesome disease, Rhizoctonia. The Bi-chloride of Mercury solution is prepared as follows:

Bi-chloride of Mercury (Corrosive Sublimate).....	4 ounces
Water.....	30 gallons

Soak the potatoes in this solution from 1 ½ to 2 hours and dry before planting.

SPECIAL NOTE—In dissolving the corrosive sublimate use a small amount of hot water, about a gallon to the ounce, adding it to the cold water when it is dissolved as it will be impossible to get good results by attempting to mix the entire amount in cold water.

WARNING—The poisonous nature and corrosive action of this solution makes it necessary to use care in handling and to keep the treated potatoes from stock or poultry. Any that are not used should be burned or buried. Make the solution in a wooden or porcelain container as it will corrode metals and rapidly lose its strength.

Both of these solutions will lose strength through use or standing for any length of time and should be made up fresh and not more than four lots of potatoes dipped without renewing the solution. The dipping can be done in bags or crates but the potatoes should then be spread out to dry, care being taken not to re-infect them by using the same bags or containers or spreading them where they would again be in contact with untreated stock.

GREENING—

After dipping the seed should go through the process of greening, leaving them spread in the light and warmth when the light will cause them to assume a greenish color and sprouting will begin. Sprouts brought on in this way will be short and thick and the potato will awaken from its dormant condition and develop much more vigor and vitality than potatoes that are not so treated. The greening also is a big factor in eliminating fungus growth and diseases. Another very valuable result from greening is the time gained as the potatoes thus treated will germinate and develop very much earlier than they would otherwise.

REMEMBER that small potatoes sorted from the average crop will contain many degenerate seed and may prove very unprofitable for planting.

But small seed that have not attained their normal size on account of late planting—frost killing the vines, dry or unfavorable growing conditions, will often produce a splendid crop as it is a curious fact that immature seed produced under the above conditions or by mowing the vines just before they ripen and digging a few weeks later has given better yields than plantings from mature tubers.

GROWING POTATOES--continued

CUTTING THE SEED PIECES—

Experience has shown that the two ounce seed piece is the most satisfactory and profitable to plant and each piece should contain at least two good eyes and should be cut in a square or blocky shape, rather than thin and long. Since the strongest buds are near the bud end of the tuber the seed sets should be cut in a manner to include one or two of these strong buds on each piece. Experience is the only guide to efficiency and the cutting of seed is very important as it has much to do with the stand. There are mechanical cutters on the market but these are not generally recommended and there is much waste from pieces that do not possess strong eyes.

To insure against rotting in the ground, should the season or planting conditions be unfavorable, dusting the cut potatoes with land plaster dries up and hardens the surface, insuring a better stand.

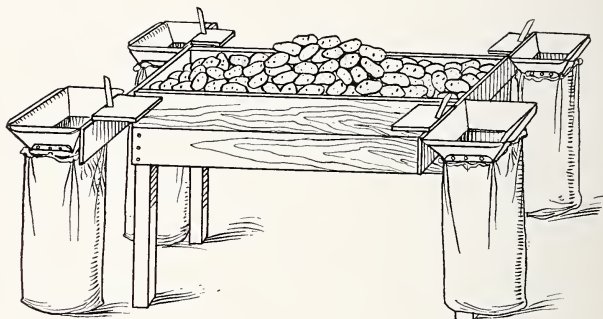
Other materials used for this purpose have not given the same satisfaction as land plaster.

STEM VERSUS SEED END—

Comparison of the results in planting the basal (stem end) and the apical (seed end) of the tuber, quoting the Cornell University report of a five years' test of twenty-one (21) varieties.

"The average number of bushels per acre of potatoes was 159.4 for the apical or seed end and 132.4 for the basal ends, a difference of 27 bushels per acre in favor of the seed ends. It was also found that the potatoes from the seed end averaged a little larger and were more uniform than those from the basal or stem end." While these results are interesting it is not always profitable to apply them to large plantings.

A CUTTING TABLE to accommodate four cutters is readily arranged by hanging the sack holders on a board nailed at the ends of a sorting table. The knives are set in a saw cut in a little board as illustrated—nailed to the end piece. The potatoes are dumped on the rack and the operator picking one up notes the best position for cutting as he brings the tuber to bear against the stationary knife. The cut pieces fall into the sacks and a handful of land plaster is dusted in on them occasionally and as they fill up they can be removed directly to the field. This is a very rapid and satisfactory way of cutting.



PLANTING IN CALIFORNIA—

Quoting again from Professor Gilmore, Circular 161.

"If the soil is rich and deep, well drained and well prepared, potatoes may be planted as close as 12 in. in the row with rows 20 in. apart, but under usual soil conditions in California it seems best to plant from 12 in. to 14 in. in the row with rows 36 in. to 42 in. apart. In this manner the crop may be cultivated by horse labor. The wider distance is essential under conditions where soil is poor and the moisture supply inadequate. The best depth under normal conditions is 4 in. to 5 in. If too deep the tubers will be small and of poor quality. If too shallow they will be of variable size, unshapely and often green by exposure to the light. In heavier soils the shallow depth may not be exceeded but in lighter soils the greater depth may be followed."

In the Coast regions of Southern California planting may begin in the early winter months, especially for crops that are designed for the early market. In most regions, however, planting may begin in early March and continue until June, the prospects for rich yields diminishing as the season advances. Second crop plantings are usually begun in late July or August. Early potatoes require from 70 to 90 days to mature a crop where the late varieties run from 130 to 150 days.

CULTURE—

In deep, rich, well prepared soil, seasonably planted with well selected, properly cut stock, cultivation to conserve moisture and destroy weeds is all that need be done. It is good practice, however, to harrow lightly until the crop is well up as this keeps down the weeds and breaks the crust, conserving moisture. The first cultivation with the shovel plow can be deep and thorough. Thereafter two or three light cultivations not interfering with the root growth should be sufficient to insure the crop. Level cultivation is always recommended except under unusual conditions, high hilling or ridging only being practiced for the purpose of affording drainage under excessive moisture or where the crop is grown entirely by irrigation. Ridging is also sometimes necessary in combatting tuber moth.

No standard rules for planting, cultivating or handling the crop can be made as each season and in each section conditions may vary and must be met by the grower's judgment and experience.

GROWING POTATOES--continued

IRRIGATION—

Under most conditions in California about $1\frac{3}{4}$ acre feet of water are necessary to produce a good yield but should be put on in three or four applications beginning when the plants are approaching full growth and repeating at intervals of 14 to 18 days until the vines begin to show signs of maturity. Light cultivation after each watering to break the crust in the furrow and conserve the water applied should be given. Flooding is not recommended, better results being obtained when the water is applied by furrows. In light soils furrows between each alternate pair of rows is sufficient, but a furrow between every two rows is best. In irrigating the water should never be allowed to come directly in contact with the growing tubers and it is very important to remember that the potatoes will not thrive under a fluctuating water supply but every effort must be used to maintain a sufficient and constant moisture by proper irrigation and cultivation.

The following method is used with greatest success by a practical and experienced grower in the Imperial Valley—Mr. Mansfield.

Break the ground rough, plowing to a depth of at least eight inches at any season. About the end of December, flood and later when the ground is in fit condition, work lightly to keep the moisture. Just before planting, disk and "float." The float is an arrangement of planks 8 feet wide by about 30 feet long and is used for leveling and fining the soil. Plant about the last of January, using a ten-inch plow and dropping in every third furrow, then harrow until up to keep moisture. Irrigate again before blooming just in the bud stage, not too heavy, then cultivate the centers only.

By the above method Mr. Mansfield secures an even, regular growth as most of the moisture is put in the soil by the first irrigation and by proper handling carries the crop well along in a natural way. The working up of the ground rough in the beginning, aerates the soil and exposure to the sun does much to eliminate fungus diseases.

STORAGE—

Condition of storage controls the vigor and vitality of the seed and they are much more easily and safely protected in the north than in the mild climate of California.

The first most important consideration is temperature, 34 to 40 degrees being recommended as a result of tests by various authorities and at such temperature the fungi and bacteria, causing the various rots have their development retarded and may not cause trouble, where a higher temperature would result in serious loss.

Storage cellars should be kept clean, dry and well ventilated and should be disinfected prior to the storing of the crop. It is of the utmost importance that the potatoes be perfectly dry and cured and the immature, damaged and diseased or infested tubers culled out before being placed in storage, no matter what method of storage is used.

It is also necessary to cool before placing on storage at low temperature, allowing the latent heat to pass off, as the placing of freshly dug stock into the low storage temperature may cause much damage through overheating.

It is well to note here that the practice of piling potatoes up that are in sacks and allowing them to stand for any length of time has a tendency to destroy their vitality and reduce the germination.

In some sections of our State, potatoes are dug and piled in rows four to eight feet wide and two to three feet high and covered with bean straw or potato tops, etc., keeping very well for several months on the ground.

This practice cannot be recommended on account of the danger of loss by tuber moth and other diseases.


A good suggestion for growers in the Delta section, quoting Circular No. 120 from the State Agricultural College, where the spring temperatures fall as low as 40 degrees at night, is to make a small frame storage building with double walls packed with straw or other material, the doors of which can be opened at night to admit the cool air and closed during the day. In this way the temperature can be kept low and the potatoes will keep in good condition for a long time.

SPRAYING STORAGE HOUSES—

A storage house cellar or bin should always be sprayed before putting the crop away. The following formulae being recommended—either one of which is easily prepared and applied by the use of any available sprayer or pump.

1 lb. Copper Sulphate to every 10 gals. of water.

The formaldehyde solution is 1 pt. to each gallon of water—either of these should prove satisfactory if thoroughly applied.

 Notes are being prepared for the second edition of this booklet which will include descriptions and illustrations of diseases and pests with information on their treatment. Copies will be free with orders for potatoes or mailed on receipt of 10c.



THE GILBERT SACKHOLDER as used on our sorting tables enables two men to work rapidly culling and sorting in three grades—with the minimum of handling. This useful appliance is almost indispensable in the economical handling of the crop, holding the sack firmly, yet releasing at a touch. No lifting, the opening is large and they are strong and durable. Can be hung on a fence, a wagon bed or any convenient place; also have a stand that holds two for field use. See page 12 illustrating method of making a cutting table by the use of the sack holders. We consider them as a very necessary part of our equipment.

THREE HILLS of Burba —Low Top.

The best from 100 selected hills weighing 250 pounds.

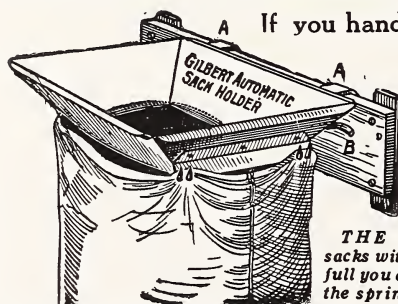
These were from a 100 acre field of California certified stock—grown from our Oregon seed.

They will be planted in the north for the production of seed stock, thus perpetuating the best strain for further re-selection.

The fie where these potatoes were grown is illustrated on the opposite and was the 1916 crop.



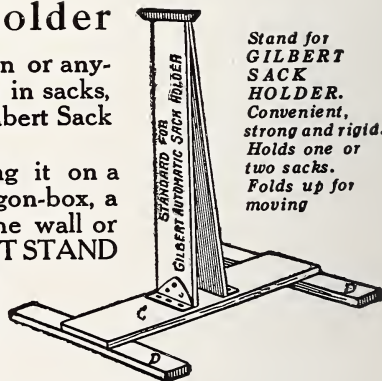
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A If you handle potatoes, grain or anything that goes in sacks, you need a Gilbert Sack Holder.

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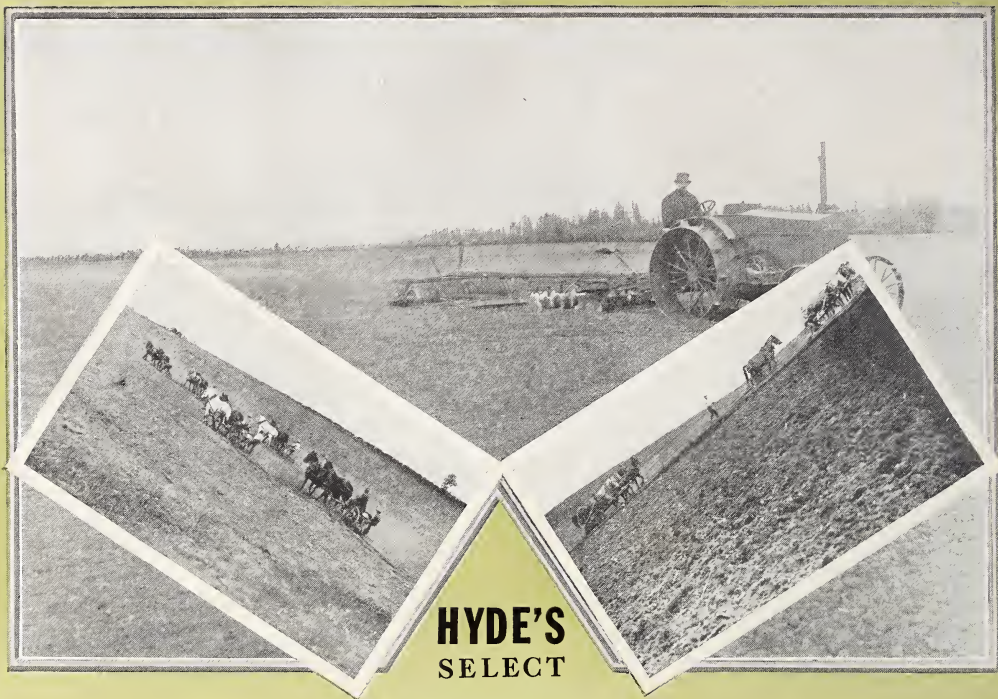
Wonderful Results from Northern Grown Seed



Field of American Wonder that passed certification, crop of 1916—produced from our northern grown seed—demonstrating that the stock we offer will produce well the first year and need not be acclimated.



100-acre field of Salinas Burbanks, first season from our northern seed. These also were certified 1916—both plantings yielded heavily.



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NORTHERN GROWN

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GROWN TO ORDER
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SEED POTATOES OF ALL SIZES
JUST AS THEY GROW IN THE FIELD